

## 1. Identification of the substance/preparation and of the company

- Identification of the product:

Trade name: SPUR SHADOWmax, consisting of part A and part B

- Use of the substance/preparation: photographic developing agent, particularly for development of black and white films.

- Manufacturer/distributor identification

Manufacturer: SPUR Photochemie  
Dr. Heidrich und Schain GbR  
Schmiedestr. 31, 52379 Langerwehe  
Germany  
Phone: 0049 (0)2423-6198  
Fax: 0049 (0)2423-406980  
Email: [schain@spur-photo.com](mailto:schain@spur-photo.com)

Distributor: SPUR Photochemie  
Dr. Heidrich und Schain GbR  
Schmiedestr. 31, 52379 Langerwehe  
Germany  
Phone: 0049 (0)2423-6198  
Fax: 0049 (0)2423-406980  
Email: [schain@spur-photo.com](mailto:schain@spur-photo.com)

- Further information phone: 0049 (0)2423-6198

- Competent person, responsible for Safety Data Sheet (email):  
[schain@spur-photo.com](mailto:schain@spur-photo.com) (management)

- Emergency telephone (Germany): 0049 (0)30-19240 (Berlin poison control centre for symptoms of intoxication and embryonal toxicology); 0049(0) 6131-19240 (advice centre for poisoning Mainz)

## 2. Hazards identification

- Classification of the substance or mixture
- Classification according to regulation (EC) No. 1272/2008

Part A :

Acute Tox. 4; Skin Irrit. 2; Skin sens. 1; Eye Irrit. 2 ; Muta. 2 ; Carc. 2 ; Aqu. Chron. 2

H 302 Harmful if swallowed ; H 312 Harmful in contact with skin H 315 Causes skin irritation  
H 317 May cause an allergic skin reaction; H 319 Causes serious eye irritation  
H 341 Suspected of causing genetic defects; H 351 Suspected of causing cancer  
H 411 Toxic to aquatic life with long lasting effects

## Part B:

Akut Tox. 4 H 302 Harmful if swallowed.

Skin Irrit. 2 H 315 Causes skin irritation.

Eye Irrit. 2 H 319 Causes serious eye irritation.

Aquatic Chronic. 4 H 413 May cause long lasting harmful effects to aquatic life.

- Labelling elements
- Labelling according to regulation (EC) No. 1272/2008

The mixture is classified and labelled according to the CLP Regulation

## Part A:

- Hazard pictograms



GHS 08



GHS 07



GHS 09

- Signal word: Warning
- Hazard statements

H 302 Harmful if swallowed : H 312 Harmful in contact with skin H 315 Causes skin irritation

H 317 May cause an allergic skin reaction; H 319 Causes serious eye irritation

H 341 Suspected of causing genetic defects; H 351 Suspected of causing cancer

H 411 Toxic to aquatic life with long lasting effects

- Precautionary statements

P 202 Do not handle until all safety precautions have been read and understood

P 281 Use personal protective equipment as required

P 308 + P313 IF exposed or concerned: Get medical advice/attention

P 405 Store locked up

P 501 Dispose of contents/container to hazardous waste

- Other hazards
- Results of the PBT and vPvB assessments
- PBT: not applicable
- vPvB: not applicable

## Part B :

- Hazard pictogram



GHS 07

- Signal word: Warning

- Hazard statements

H 302 Harmful if swallowed.

H 315 Causes skin irritation.

H 319 Causes serious eye irritation.

H 413 May cause long lasting harmful effects to aquatic life.

- Precautionary statements

P 273 Avoid release to the environment.

P 301 + P 312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

P 302 + P 352 IF ON SKIN: Wash with plenty of soap and water.

P 305 + P 351 + P 338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P 337 + P 313 If eye irritation persists: Get medical advice/attention.

- Other hazards

Results of the PBT and vPvB assessment

- PBT: not applicable

- vPvB: not applicable

### 3. Composition/Information on ingredients

- Chemical characterisation: aqueous solution (both parts)

- Hazardous ingredients:

## Part A :

Potassium carbonate: EINECS: 209-529-3; CAS RN: 584-08-7

Percentage: < 6 %

Classification according to Regulation (EC) No. 1272/2008:

Skin Irrit. 2 H 315; Eye Irrit. 2 H 319; STOT SE 3 H 335

---

Day of issue: 03.12.19

page 4/13

Sodium Hydroxide: EINECS 215-185-5; CAS RN: 1310-73-2  
Percentage: < 0.5 %  
Classification according to Regulation (EC) No. 1272/2008:  
Met. Corr. 1 H 290; Skin corr. 1A H 314

Trilon C: EINECS: 205-391-3; CAS RN: 140-01-2  
Percentage: < 1 %  
Classification according to Regulation (EC) No. 1272/2008:  
Acute Tox. (inhalative) 4 H 332; Repr. Lact. 2 H 361

Diethylene glycol: EINECS: 203-872-2; CAS RN: 111-46-6  
Percentage: < 7 %  
Classification according to Regulation (EC) No. 1272/2008:  
STOT RE 2 H 373; Acute Tox. 4 H 302

4-Hydroxymethyl-4-methyl-1-phenyl-3-pyrazolidone: EINECS: 235-920-3; CAS RN: 13047-13-7  
Percentage: < 0.3 %  
Classification according to Regulation (EC) No. 1272/2008:  
Acute Tox. 4 H 302; Skin Sens. 1 H 317 ; Aquatic Chronic 2 H 411

1-Phenyl-3-pyrazolidinone: EINECS: 202-155-1, CAS RN: 92-43-3  
Percentage: < 0.2 %  
Classification according to Regulation (EC) No. 1272/2008:  
Acute Tox. 4 H 302; Aquatic Chronic 2 H 411

Hydroquinone (1,4-Dihydroxybenzene): EINECS: 204-617-8; CAS RN: 123-31-9  
Percentage: < 2.5 %  
Classification according to Regulation (EC) No. 1272/2008:  
Carc.2 H 351; Muta 2 H 341; Acute Tox. 4 H 302; Eye Dam. 1 H 318; Skin Sens. 1 H 317;  
Aquatic Acute. 1 H 400

Hydroquinone sulfonic acid (potassium salt): EINECS: 244-584-7; CAS RN: 21799-87-1  
Percentage: < 3 %  
Classification according to Regulation (EC) No. 1272/2008:  
Eye Irrit. 2 H 319; Skin Sens. 1 H 317

#### Part B:

Potassium carbonate: EINECS: 209-529-3; CAS-RN. 584-08-7  
Percentage: < 10 %  
Classification according to Regulation (EC) No 1272/2008:  
Skin Irrit. 2 H 315; Eye Irrit 2 H 319; STOT SE 3 H 335

Boric acid: EINECS: 233-139-2; CAS-RN: 10043-35-3  
Percentage: < 0.5 %  
Classification according to Regulation (EC) No 1272/2008:  
Repr. 1B H 360FD

Day of issue: 03.12.19

page 5/13

Sodium hydroxide: EINECS: 215-185-5; CAS-RN: 1310-73-2

Percentage: < 1 %

Classification according to Regulation (EC) No 1272/2008:

Met. Corr. 1 H 290; Skin corr. 1A H 314

Citric acid monohydrate: EINECS: 201-069-1; CAS-RN: 5949-29-1

Percentage: < 2 %

Classification according to Regulation (EC) No 1272/2008:

Eye Irrit 2 H 319

- Additional reference: The wording of the hazard warnings can be looked up under section 16.

#### 4. First-aid measures

- General information: Remove items of clothing contaminated by the product immediately.
- Inhalation: Move affected person to fresh air and keep at rest. In case of persistent complaints seek medical advice.
- Skin contact: Wash off thoroughly with plenty of water.
- Eye contact: Remove contact lenses, open eyelids, flush thoroughly with water and consult a doctor.
- Ingestion: If swallowed, rinse mouth and drink plenty of water. Do not induce vomiting. Seek medical advice.
- Special information for your doctor: None.

#### 5. Fire-fighting-measures

- Suitable extinguishing media: CO<sub>2</sub>, extinguishing powder, water spray. Fight larger fires with water spray jets or alcohol-resistant foam.
- Non suitable extinguishing media: None
- Specific Hazards: Hazardous combustion products: sulphur dioxide
- Protective equipment: Do not inhale explosion and combustion gases. Wear breathing apparatus and protective clothing.
- Particular fire and explosion hazards: None

#### 6. Accidental release measures

- Personal precautions: Provide for sufficient ventilation.
- Environmental precautions: Do not empty into drains; prevent the product from contaminating surface or ground water. If waters or sewage are contaminated, report to the competent authorities. Dilute with plenty of water.
- Methods for cleaning up: Absorb with a liquid-binding agent (sand, mountain flour, sSurebinder, universal binding agent, sawdust). Sweep up and store in suitable container, dispose of contaminated material as waste labelled according to waste law in force.
- Additional information: Flush residues with water.

## 7. Handling and storage

### - Handling:

- Safe handling: Provide for proper ventilation in work area. Avoid long-term and repeated skin contact; no special measures required if used properly.
- Fire and explosion control: No special measures required.

### - Storage:

- Storage facilities and containers: No specific requirements.
- Storage with other substances: Do not store with acids, strong oxidants, and food.

### - Further information on storage conditions:

- Store in well-sealed containers cool and dry. Store away from heat and direct sunlight. Do not expose to light. Keep locked up and out of reach of children. Recommended storage temperature: 12 to 15°C

### - Storage class:

- Classification according to Ordinance on Industrial Safety and Health: not applicable

## 8. Exposure controls/personal protection

- Additional information for system design: None

|  |  |
|--|--|
| - Components with workplace-specific control parameters: |  |
| 111-46-6 Diethylene glycol (Part A)                      |  |
| MAC (Germany)  | 44 mg/m <sup>3</sup> ; 10 ml/ m <sup>3</sup><br>4(I); DFG, Y               |
| 10043-35-3 Boric acid (Part B)                           |  |
| MAC (Germany)  | 0.5 mg/m <sup>3</sup> ;<br>2(I); AGS, Y, 10; Boric acid and sodium borates |

|  |                   |                   |                 |               |           |          |                 |           |           |           |           |           |
|--|-------------------|-------------------|-----------------|---------------|-----------|----------|-----------------|-----------|-----------|-----------|-----------|-----------|
| - Personal protective equipment:   |                   |                   |                 |               |           |          |                 |           |           |           |           |           |
| General protection and hygiene measures: Wash hands before breaks and end of work. Do not inhale gases, vapours, or aerosols. Avoid skin and eye contact.  |                   |                   |                 |               |           |          |                 |           |           |           |           |           |
| Respiratory protection: Not required.  |                   |                   |                 |               |           |          |                 |           |           |           |           |           |
| Hand Protection: Wear protective gloves made from materials impermeable and resistant to the product/substance/preparation. The materials have to be chosen with due regard to penetration times, permeation rates, and degradation.   |                   |                   |                 |               |           |          |                 |           |           |           |           |           |
| Glove material: The choice of a suitable glove not only depends on the material, but also on further quality features and may vary from manufacturer to manufacturer. As the product is a preparation composed of a number of substances, the stability of the glove materials is not predictable and, therefore, needs to be tested before use. The liquid tightness of the glove has to be tested before it is used again. Due to a lack of testing, no glove material can be recommended for the product/substance/preparation. |                   |                   |                 |               |           |          |                 |           |           |           |           |           |
| Penetration time of the glove material: The exact breakthrough time can be given by the protective gloves manufacturer and is to be observed.  |                   |                   |                 |               |           |          |                 |           |           |           |           |           |
| <table border="0"> <tr> <td>Glove material</td> <td>breakthrough time</td> <td>layer thickness</td> </tr> <tr> <td>Butyl rubber:</td> <td>&gt; 480 min</td> <td>≥ 0,4 mm</td> </tr> <tr> <td>Nitrile Rubber:</td> <td>&gt; 480 min</td> <td>≥ 0,38 mm</td> </tr> <tr> <td>Neoprene:</td> <td>&gt; 240 min</td> <td>≥ 0,65 mm</td> </tr> </table>   | Glove material    | breakthrough time | layer thickness | Butyl rubber: | > 480 min | ≥ 0,4 mm | Nitrile Rubber: | > 480 min | ≥ 0,38 mm | Neoprene: | > 240 min | ≥ 0,65 mm |
| Glove material   | breakthrough time | layer thickness   |                 |               |           |          |                 |           |           |           |           |           |
| Butyl rubber:  | > 480 min         | ≥ 0,4 mm          |                 |               |           |          |                 |           |           |           |           |           |
| Nitrile Rubber:  | > 480 min         | ≥ 0,38 mm         |                 |               |           |          |                 |           |           |           |           |           |
| Neoprene:  | > 240 min         | ≥ 0,65 mm         |                 |               |           |          |                 |           |           |           |           |           |
| Eye Protection: Wear safety goggles.   |                   |                   |                 |               |           |          |                 |           |           |           |           |           |
| Skin/body protection: Wear protective clothing.  |                   |                   |                 |               |           |          |                 |           |           |           |           |           |

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| - General information                    | Part A                | Part B                 |
|--|-----------------------|------------------------|
| Form:                                    | liquid                | liquid                 |
| Colour:                                  | light yellow          | achromatic             |
| Odour:                                   | specific              | odourless              |
| - Change of state                        |                       |                        |
| Melting point / melting range            | not determined        | not determined         |
| Boiling point / boiling range            | > 100° C              | > 100° C               |
| - Flash point                            | not applicable        | not applicable         |
| - Auto-flammability                      | no ~                  | no ~                   |
| - Explosion hazard                       | no ~                  | no ~                   |
| - Vapour pressure at 20° C               | not specified         | not specified          |
| - Density at 20° C                       | 1.2 g/cm <sup>3</sup> | 1.13 g/cm <sup>3</sup> |
| - Solubility in / miscibility with water | complete              | complete               |
| - pH-value at 20° C                      | 10.2                  | 11.35                  |
| - Solvent content                        |                       |                        |
| Organic solvent:                         | 0.0 %                 | 0.0 %                  |
| Water:                                   | 68 %                  | 86.5 %                 |
| VOC (EC):                                | 0.0 %                 | 0.0 %                  |
| - Solids content:                        | 32 %                  | 13.5%                  |

**10. Stability and reactivity**

- Thermal decomposition/conditions to avoid:  
No decomposition when used properly.
- Materials to avoid: Strong acids and oxidising agents
- Hazardous reactions: No hazardous reactions known.
- Hazardous decomposition products: no hazardous decomposition products known.

**11. Toxicological information**

## - Acute toxicity (Part A)

|   |      |   |
|---|------|---|
| - Classification relevant LD/LC50 values:                   |      |   |
| 123-31-9 Hydroquinone                                       |      |   |
| Oral:   | LD50 | 320 mg/kg (rat)                         |
| 13047-13-7 4-Hydroxymethyl-4-methyl-1-phenyl-3-pyrazolidone |      |   |
| Oral:   | LD50 | 1000 mg/kg (rat)                        |
| Dermal:   | LD50 | > 2000 mg/kg (rat)                      |
| 140-01-2 Trilon C   |      |   |
| Oral:   | LD50 | 4550 mg/kg (rat)                        |
| Dermal:   | LD50 | > 2000 mg/kg (rat)                      |
| Inhalative:   | LC50 | 4 h 1000 – 5000 mg/m <sup>3</sup> (rat) |
| 92-43-3 1-Phenyl-3-pyrazolidinone                           |      |   |
| Oral:   | LD50 | 200 mg/kg (rat)                         |
| 21799-87-1 Hydroquinone sulfonic acid (potassium salt)      |      |   |
| Oral:   | LD50 | > 10000 mg/kg (rat)                     |
| Dermal:   | LD50 | > 5000 mg/kg (rabbit)                   |
| 111-46-6 Diethylene glycol                                  |      |   |
| Oral:   | LD50 | 12565 mg/kg (rat)                       |
| Oral:   | LDLo | 1000 mg/kg (human)                      |
| 1310-73-2 Sodium Hydroxide                                  |      |   |
| Oral:   | LD50 | 2000 mg/kg (rat)                        |
| 584-08-7 Potassium carbonate                                |      |   |
| Oral:   | LD50 | > 2000 mg/kg (rat)                      |

- Primary irritant effect:
- Skin: Irritant effect.
- Eye: Irritant effect.
- Sensitisation: May cause sensitisation by skin contact

## - Acute toxicity (Part B)

|   |      |                    |
|---|------|--------------------|
| - Classification relevant LD/LC50 values: |      |                    |
| 10043-35-3 Boric acid                     |      |                    |
| Oral:                                     | LD50 | 2660 mg/kg (rat)   |
| Dermal:                                   | LD50 | > 2000 mg/kg (rat) |
| 1310-73-2 Sodium hydroxide                |      |                    |
| Oral:                                     | LD50 | 2000 mg/kg (rat)   |
| 5949-29-1 Citric acid monohydrate         |      |                    |



|                              |      |                    |
|------------------------------|------|--------------------|
| Oral:                        | LD50 | > 2000mg/kg (rat)  |
| 584-08-7 Potassium carbonate |      |                    |
| Oral:                        | LD50 | > 2000 mg/kg (rat) |

- Primary irritant effect:
- Skin: no irritant effect.
- Eye: no irritant effect.
- Sensitisation: no sensitising effects known.

## 12. Ecological information

### - Ecotoxicity (Part A)

|   |   |
|---|---|
| - Aquatic toxicity  |   |
| 1310-73-2 Sodium Hydroxide                                  |   |
| EC50  | 48h: 40.4 mg/l (crustacea)                              |
| LC50  | 96h: 196 mg/l (fish)                                    |
| 123-31-9 Hydroquinone                                       |   |
| EC50  | 48h: 0.29 mg/l (daphnia magna)                          |
| LC50  | 96h: 0.044 mg/l (Pimepales promelas)                    |
| 13047-13-7 4-Hydroxymethyl-4-methyl-1-phenyl-3-pyrazolidone |   |
| EC50  | 24h: 7.1 ppm (Daphnia magna)                            |
| LC50  | 1 – 10 mg/l (fish fathead minnow / Pimephales promelas) |
| LC50  | 35 mg/l (fish ide / Leuciscus idus auratus Bade)        |
| LC50  | 96h: 32 ppm (fish rainbow trout / Onchorhynchus mykiss) |
| 92-43-3 1-Phenyl-3-pyrazolidinone                           |   |
| LC50  | 96h: 5 mg/l (Pimepales promelas, fish)                  |

- Remark: Toxic to fish

### - General Information:

Water hazard class 2 (self-assessment according to VwVwS(German administrative regulation regarding water pollutants)): Hazardous to water. Do not empty into drains; do not let product contaminate ground water, waters or sewage. Toxic to aquatic organisms.

### - Ecotoxicity (Part B)

|                                   |  |
|-----------------------------------|--|
| - Aquatic toxicity                |  |
| 1310-73-2 sodium hydroxide        |  |
| EC50                              | 48h: 40,4 mg/l (crustacea)               |
| LC50                              | 96h: 196 mg/l (fish)                     |
| 5949-29-1 Citric acid monohydrate |  |
| EC50                              | 72h: > 100 mg/l (Daphnia magna)          |
| LC50                              | 96h: > 100 mg/l (Leuciscus idus)         |
| 10043-35-3 Boric acid             |  |
| EC50                              | 48h: 133 mg/l (Daphnia magna)            |
| LC50                              | 96h: 50 -100 mg/l (Onchorhynchus mykiss) |

- Notice: May be harmful to fish.

### - General Information:

Water hazard class 1 (self-assessment according to VwVwS(German administrative regulation regarding water pollutants)): slightly hazardous to water.

Do not let product contaminate ground water, waters or sewage undiluted or in large quantities.

May be harmful to aquatic organisms.

### 13. Disposal considerations

- Product:
- Recommendation: Do not dispose of the product through household waste. Do not let product contaminate sewage.

|  |
|--|
| - European Waste Directory                             |
| 090101   water-based developer and activator solutions |

- Uncleaned packaging:
- Recommendation: Disposal according to official regulations and requirements.
- Recommended cleaning agent: Water, if necessary, with cleaning agent.

### 14. Transport information

|   |
|---|
| - Land transport ADR/RID and GGVS/GGVE (cross-border/inland): |
| - ADR/GGVS/E class: No dangerous good, not classified         |
| - Maritime transport IMDG/GGVSea:                             |
| - IMDG/GGVSea-class: No dangerous good, not classified        |
| - Marine pollutant: No  |
| - Air transport ICAO-TI and IATA-DGR:                         |
| - ICAO/IATA class: No dangerous good, not classified          |
| - UN "Model Regulation" : No dangerous good, not classified   |

### 15. Regulatory information

Designation according to EC guidelines:

The mixture is classified and labelled according to the CLP Regulation (EC) No. 1272/2008:

Part A:

- Hazard pictograms



GHS 08



GHS 07



GHS 09

- Signal word: Warning

- Hazard statements

H 302 Harmful if swallowed ; H 312 Harmful in contact with skin H 315 Causes skin irritation  
H 317 May cause an allergic skin reaction; H 319 Causes serious eye irritation  
H 341 Suspected of causing genetic defects; H 351 Suspected of causing cancer  
H 411 Toxic to aquatic life with long lasting effects

- Precautionary statements

P 202 Do not handle until all safety precautions have been read and understood

P 281 Use personal protective equipment as required

P 308 + P 313 IF exposed or concerned: Get medical advice/attention

P 405 Store locked up

P 501 Dispose of contents/container to hazardous waste

- Special designation of certain preparations: Contains hydroquinone < 2.5 %

- National regulations:

Classification according to Ordinance on Industrial Safety and Health (BetrSichV): -

Water hazard class (according VwVwS): Water hazard class 2 (self-assessment): hazardous to water

- Technical Instructions on Air Quality:

| <u>Class</u> | <u>Percentage (%)</u> |
|--------------|-----------------------|
| Water        | 68                    |
| I            | 2.1                   |

Part B:

- Hazard pictogram



GHS 07

- Signal word: Warning

- Hazard statements:

H 302 Harmful if swallowed.

H 315 Causes skin irritation.

H 319 Causes serious eye irritation.

H 413 May cause long lasting harmful effects to aquatic life.

- Precautionary statements

P 273 Avoid release to the environment.

P 301 + P 312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

P 302 + P 352 IF ON SKIN: Wash with plenty of soap and water.

P 305 + P 351 + P 338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P 337 + P 313 If eye irritation persists: Get medical advice/attention.

- Special designation of certain preparations: -

- National regulations:

Classification according to Ordinance on Industrial Safety and Health (Betriebssicherheitsverordnung: BetrSichV): -

Water hazard class according to VwVwS (German administrative regulation regarding water pollutants): Water hazard class 1 (self-assessment): Slightly hazardous to water.

- Technical Instructions on Air Quality:

| <u>Class</u> | <u>Percentage (%)</u> |
|--------------|-----------------------|
| Water        | 86.5                  |
| I            | 0.0                   |

## 16. Other information

The data given in this safety data sheet is based on our present knowledge. It does not guarantee any specific product features and does not establish a contractual legal relationship.

- Relevant H statements:

|          |   |
|----------|---|
| H 290    | May be corrosive to metals  |
| H 302    | Harmful if swallowed  |
| H 312    | Harmful in contact with skin                                      |
| H 314    | Causes severe skin burns and eye damage                           |
| H 315    | Causes skin irritation  |
| H 317    | May cause an allergic skin reaction                               |
| H 318    | Causes serious eye damage   |
| H 319    | Causes serious eye irritation                                     |
| H 332    | Harmful if inhaled  |
| H 335    | May cause respiratory irritation                                  |
| H 341    | Suspected of causing genetic defects                              |
| H 351    | Suspected of causing cancer                                       |
| H 360 FD | May damage fertility. May damage the unborn child                 |
| H 361    | Suspected of damaging fertility or the unborn child               |
| H 373    | May cause damage to organs through prolonged or repeated exposure |
| H 400    | Very toxic to aquatic life  |
| H 410    | Very toxic to aquatic life with long lasting effects              |
| H 411    | Toxic to aquatic life with long lasting effects                   |
| H 413    | May cause long lasting harmful effects to aquatic life            |

- Responsible for data sheet: management

- Person of contact: Dipl.-Ing. Heribert Schain

- Abbreviations and Acronyms

ADR: Accord europeen sur le transport des marchandises Dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

RID: Reglement internationale concernent le transport des marchandises dangereuses par chemin de fer ( Regulations concerning the international Transport of Dangerous Goods by Rail)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

IATA-DGR: Dangerous Goods Regulations by the “International Air Transport Association” (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the “International Civil Aviation Organization” (ICAO)

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

GefStoffV: Gefahrstoffverordnung (Ordinance on Hazardous Substances, Germany)

VOC: Volatile Organic Compounds (USA, EC)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

LDLo Lethal dose low

EC50 half maximal effective concentration